

Is Now Part of



ON Semiconductor®

To learn more about ON Semiconductor, please visit our website at www.onsemi.com

Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (_), the underscore (_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at www.onsemi.com. Please email any questions regarding the system integration to Fairchild guestions@onsemi.com.

ON Semiconductor and the ON Semiconductor logo are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any EDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officer



September 2015

FDN5632N_F085

N-Channel Logic Level PowerTrench[®] MOSFET 60 V, 1.6 A, 98 m Ω

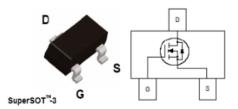
Features

- \blacksquare R_{DS(on)} = 98 m Ω at V_{GS} = 4.5 V, I_D = 1.6 A
- \blacksquare R_{DS(on)} = 82 m Ω at V_{GS} = 10 V, I_D = 1.7 A
- Typ $Q_{g(TOT)}$ = 9.2 nC at V_{GS} = 10 V
- Low Miller Charge
- UIS Capability
- Qualified to AEC Q101
- RoHS Compliant

Applications

- DC/DC converter
- Motor Drives





MOSFET Maximum Ratings T_A = 25°C unless otherwise noted

Symbol	Parameter	Ratings	Units
V_{DSS}	Drain to Source Voltage	60	V
V_{GS}	Gate to Source Voltage	±20	V
	Drain Current Continuous (V _{GS} = 10V)	1.7	۸
I _D	Pulsed	10	Α
E _{AS}	Single Pulse Avalanche Energy (Note 1)	74	mJ
P_{D}	Power Dissipation	1.1	W
T_J, T_{STG}	Operating and Storage Temperature	-55 to +150	°C
$R_{\theta JC}$	Thermal Resistance Junction to Case	75	oC/W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient TO-252, 1in ² copper pad area	111	°C/W

Note:

1: E_{AS} of 74mJ is 100% test at L=80mH, I_{AS} =1.4A, starting T_{J} = 25 $^{\circ}C$

Package Marking and Ordering Information

Device Marking	Device	Package	Reel Size	Tape Width	Quantity
5632	FDN5632N_F085	SSOT3	7"	8mm	3000 units

Units

Max

Min

Тур

Electrical Characteristics $T_A = 25^{\circ}C$ unless otherwise noted

Parameter

Off Characteristics								
B _{VDSS}	Drain to Source Breakdown Voltage	$I_D = 250 \mu A, V_{GS}$	= 0V	60	-	-	V	
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 48V,		-	-	1		
		$V_{GS} = 0V$	$T_A = 125^{\circ}C$	-	-	250	μΑ	
I _{GSS}	Gate to Source Leakage Current	$V_{GS} = \pm 20V$		-	-	±100	nA	

Test Conditions

On Characteristics

Symbol

$V_{GS(th)}$	Gate to Source Threshold Voltage	$V_{GS} = V_{DS}$, $I_D = 250\mu A$	1	2.0	3	V
		I _D = 1.7A, V _{GS} = 10V	-	57	82	
r _{DS(on)} Dra		I _D = 1.6A, V _{GS} = 6V	-	62	88	
	Drain to Source On Resistance	I _D = 1.6A, V _{GS} = 4.5V		70	98	$m\Omega$
		I _D = 1.7A, V _{GS} = 10V, T _A = 150°C	-	107	135	

Dynamic Characteristics

C _{iss}	Input Capacitance	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz		-	475	-	pF
Coss	Output Capacitance			-	60	-	pF
C _{rss}	Reverse Transfer Capacitance			-	30	-	pF
R_{G}	Gate Resistance	f = 1MHz		-	1.4		Ω
$Q_{g(TOT)}$	Total Gate Charge at 10V	V _{GS} = 0 to 10V	V - 20V	-	9.2	12	nC
Q _{gs}	Gate to Source Gate Charge	V _{DD} = 20V I _D = 1.7A		-	1.5	-	nC
Q _{gd}	Gate to Drain "Miller" Charge		יטי	-	1.4	-	nC

Electrical Characteristics $T_A = 25^{\circ}C$ unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Тур	Max	Units

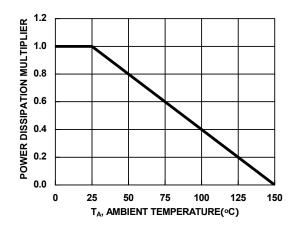
Switching Characteristics

t _{on}	Turn-On Time		-	-	30	ns
t _{d(on)}	Turn-On Delay Time	.,	-	15	-	ns
t _r	Rise Time	$V_{DD} = 30V, I_{D} = 1.0A$ $V_{GS} = 10V, R_{GEN} = 6\Omega$	-	1.7	-	ns
t _{d(off)}	Turn-Off Delay Time	V _{GS} = 10V, R _{GEN} = 052	-	5.2	-	ns
t _f	Fall Time		-	1.3	-	ns
t _{off}	Turn-Off Time		-	-	12.9	ns

Drain-Source Diode Characteristics

V _{SD}	Source to Drain Diode Voltage	I _{SD} = 1.7A	-	8.0	1.25	\/	
		$I_{SD} = 0.85A$	-	0.8	1.0	v	
t _{rr}	Reverse Recovery Time	-I _{SD} = 1.7A, dI _{SD} /dt = 100A/μs	-	16.0	21	ns	
Q _{rr}	Reverse Recovery Charge		-	7.9	10.3	nC	

Typical Characteristics



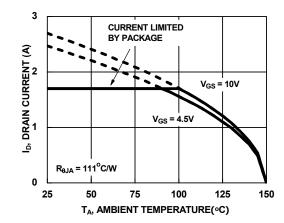


Figure 1. Normalized Power Dissipation vs. Case Temperature

Figure 2. Maximum Continuous Drain Current vs.

Case Temperature

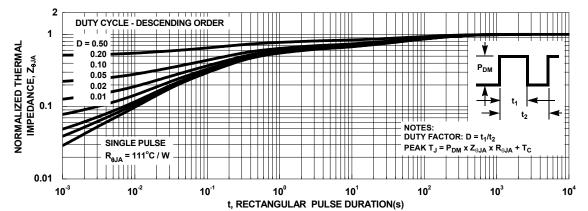


Figure 3. Normalized Maximum Transient Thermal Impedance

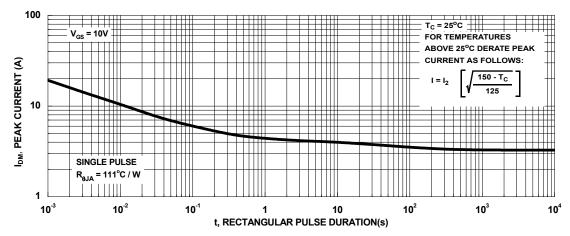


Figure 4. Peak Current Capability

Typical Characteristics

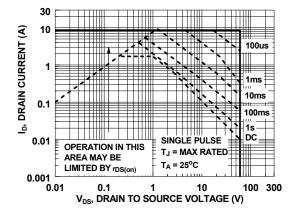
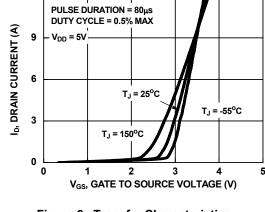


Figure 5. Forward Bias Safe Operating Area



12

Figure 6. Transfer Characteristics

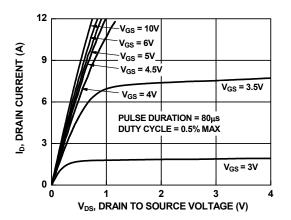


Figure 7. Saturation Characteristics

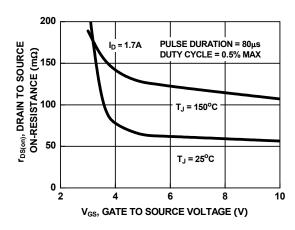


Figure 8. Drain to Source On-Resistance Variation vs Gate to Source Voltage

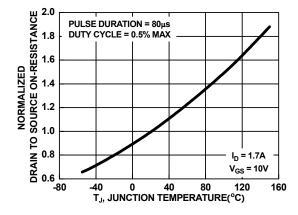


Figure 9. Normalized Drain to Source On Resistance vs Junction Temperature

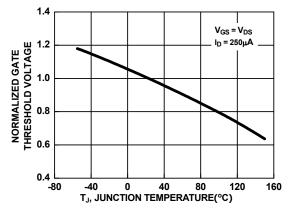


Figure 10. Normalized Gate Threshold Voltage vs Junction Temperature

Typical Characteristics

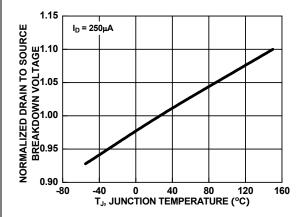


Figure 11. Normalized Drain to Source Breakdown Voltage vs Junction Temperature

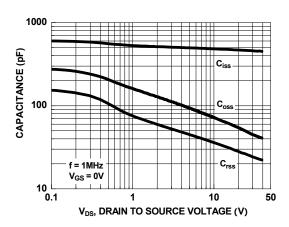


Figure 12. Capacitance vs Drain to Source Voltage

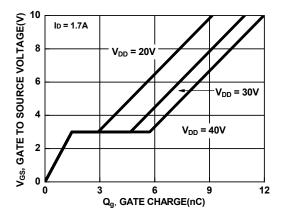
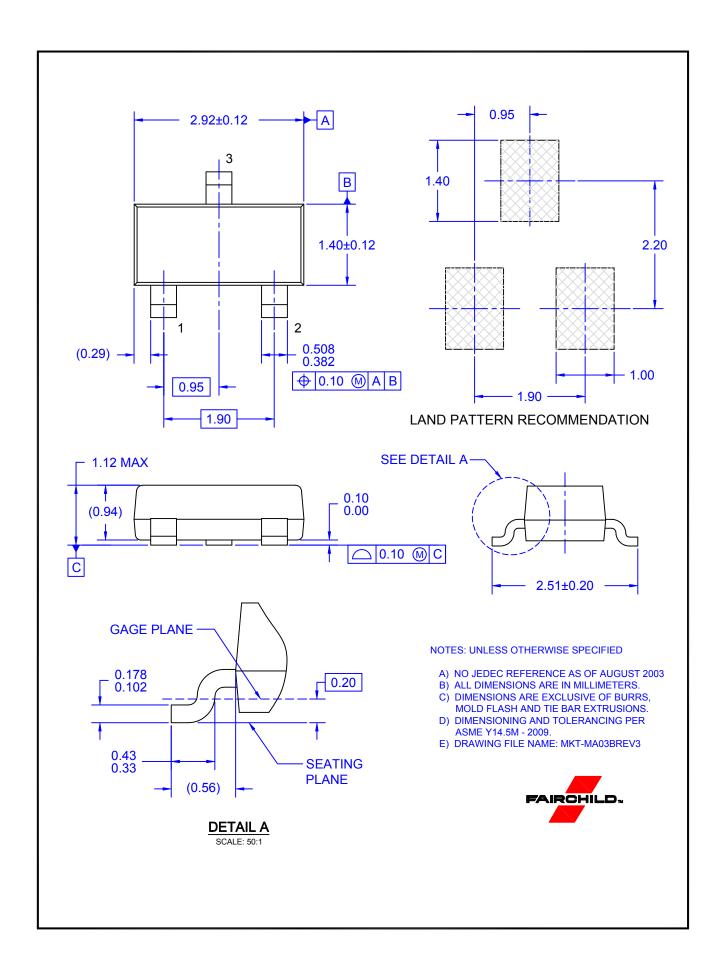


Figure 13. Gate Charge vs Gate to Source Voltage



ON Semiconductor and in are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdt/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and exp

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: orderlit@onsemi.com N. American Technical Support: 800-282-9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support:
Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81-3-5817-1050

ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ON Semiconductor:

FDN5632N_F085

ПОСТАВКА ЭЛЕКТРОННЫХ КОМПОНЕНТОВ

многоканальный

Общество с ограниченной ответственностью «МосЧип» ИНН 7719860671 / КПП 771901001 Адрес: 105318, г.Москва, ул.Щербаковская д.3, офис 1107

Данный компонент на территории Российской Федерации Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

http://moschip.ru/get-element

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г. Москва, ул. Щербаковская д. 3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru moschip.ru_6 moschip.ru_4 moschip.ru_9